

Docket No. RM2018-5

Public Representative Comments

BEFORE THE  
POSTAL REGULATORY COMMISSION  
WASHINGTON, DC 20268-0001

Periodic Reporting  
(Proposal Two)

Docket No. RM2018-5

COMMENTS OF THE PUBLIC REPRESENTATIVE

(July 26, 2018)

I. INTRODUCTION

The Public Representative hereby provides comments pursuant to Commission Order No. 4630.<sup>1</sup> In that order, the Commission established the above-referenced docket to receive comments from interested persons addressing the Postal Service's proposal to change analytical principles related to periodic reporting.<sup>2</sup> The Postal Service filed the Petition pursuant to 39 C.F.R. § 3050.11. Petition at 1. The Postal Service provided additional information in its responses to three Chairman's Information

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<sup>1</sup> Notice of Proposed Rulemaking on Analytical Principles Used in Periodic Reporting (Proposal Two), June 1, 2018 (Order No. 4630).

<sup>2</sup> Petition of the United States Postal Service for the Initiation of a Proceeding to Consider Proposed Changes in Analytical Principles (Proposal Two), May 25, 2018 (Petition).

Requests (CHIRs),<sup>3</sup> in public and non-public library references,<sup>4</sup> and in an informal response to a question posed by the Public Representative.<sup>5</sup>

In Order No. 4700, the Commission extended the comments deadline to July 26, 2018.<sup>6</sup>

## II. SUMMARY OF PROPOSAL

Proposal Two seeks to change a statistical design for sampling city carriers in the In-Office Cost System (IOCS). Petition, Proposal Two at 1. Currently, the IOCS sampling design employs a procedure “to randomly select craft employees, including city carriers, then an interval of work time from the employee’s tour.” *Id.* The Postal Service claims that such “a multi-stage probability sample” results in readings that are “widely dispersed, both in time and in space.” *Id.* The Postal Service proposes to replace the current IOCS sampling design for city carriers with a cluster sampling and to use data from the Time and Attendance Collection System (TACS) and Delivery Operations Information System (DOIS) to weight sampling data by zone. *Id.* at 2, 4. Under the current IOCS sampling design for city carriers, the Postal Service conducts most readings by telephone. *Id.* at 1-2. Under the proposed design, much more of the

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<sup>3</sup> Responses of the United States Postal Service to Questions 1-19 of Chairman’s Information Request No. 1, June 29, 2018 (Responses to CHIR No. 1); Responses of the United States Postal Service to Questions 1-8 of Chairman’s Information Request No. 2, July 5, 2018 (Responses to CHIR No. 2); Responses of the United States Postal Service to Questions 1-11 of Chairman’s Information Request No. 3, July 23, 2018. (Responses to CHIR No.3).

<sup>4</sup> See USPS-RM2018-5/1 through USPS-RM2018-5/3 and USPS-RM2018-5/NP1 through USPS-RM2018-5/NP6.

<sup>5</sup> Informal Response of the United States Postal Service to Question Posed by the Public Representative, July 9, 2018 (Informal Response).

<sup>6</sup> Order Granting Motion to Adjust Procedural Schedule, July 9, 2018 (Order No. 4700). See also Motion of the United States Postal Service to Adjust Procedural Schedule, July 5, 2018.

readings will be conducted on-site. *Id.* at 1-3. The Postal Service maintains that the revised sampling design should improve both the quality of data and efficiency of data collection. *Id.* at 1-2. Furthermore, under Proposal Two, the Postal Service would “develop control total costs” for Sundays and holidays using TACS hours, and then attribute these costs to products using scanning data from Product Tracking and Reporting (PTR) data.<sup>7</sup> *Id.* at 2, 5, 9.

### III. BACKGROUND

The Postal Service notes that it has previously filed a proposal that is “similar in some respects” to Proposal Two. Petition, Proposal Two at 2. That proposal, labeled Proposal Three, was withdrawn.<sup>8</sup> The main reason for the withdrawal was the Commission’s denial of another, closely related proposal (Proposal Nine).<sup>9</sup> Petition, Proposal Two at 3. The Postal Service has previously confirmed that Proposal Three depended on approval of Proposal Nine.<sup>10</sup> The Postal Service specifically noted that “[would] not [be] possible to implement IOCS-Cluster [proposed by Proposal Three] without acceptance of Proposal Nine.” *Id.*, question 1 a,b. In the current docket, the Postal Service continues to use its current definitions of office and street, rather than

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<sup>7</sup> The Postal Service will not conduct any tests on Sundays/holidays. *Id.* at 5.

<sup>8</sup> See Docket No. RM2016-11, Petition of the United States Postal Service for the Initiation of a Proceeding to Consider Proposed Changes in Analytical Principles (Proposal Three), August 22, 2016; Notice of the United States Postal Service of Withdrawal of Proposal Three, September 28, 2016; Order Closing Docket, October 7, 2016.

<sup>9</sup> Docket No. RM2016-11, Order Closing Docket, October 7, 2016 at 7. See *also* Docket No. RM2015-2, Order No. 3526, Order Denying Changes in Analytical Principles Used in Periodic Reporting (Proposal Nine), September 22, 2016.

<sup>10</sup> Responses of United States Postal Service to Questions 1-8, 11-13, 15, 18.a-c, and 21 of Chairman’s Information Request No. 1, questions 1 and 2, September 16, 2016.

“define office and street time by using TACS clocking,” as proposed in the denied Proposal Nine. Petition, Proposal Two at 2.

The Postal Service stresses that “the availability of detailed clock ring data” from TACS “affords the opportunity to reshape the sampling design significantly.” Petition, Proposal Two at 2. The Postal Service notes that the Commission has recently approved the use of TACS in Proposal Five “to determine the total city carrier costs for letter routes and for Special Purpose Routes.”<sup>11</sup> Petition, Proposal Two at 2. Proposal Two would “extend[] the use of TACS data to weight sampling data by [ delivery] zone” and “provide cost controls for city carriers by time of day (morning from afternoon) and day of week group (Sunday/Holiday from weekday/Saturday).” Petition, Proposal Two at 2-4. The Postal Service claims that it has implemented an approach that the Commission suggested in Proposal Five to develop “route group weighting factors when [there are] no tallies within the combination of route group (letter and SPR) and carrier group (full time; part time/transitional). Petition, Proposal Two at 12.

#### IV. COMMENTS

The Public Representative has identified two major parts of Proposal Two: the modified statistical study design and the new methodology for estimation and attribution of Sunday/holiday costs. The Public Representative will discuss these two parts of Proposal Two separately.

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<sup>11</sup> See Docket No. RM2017-9, Order on Analytical Principles Used in Periodic Reporting (Proposal Five), February 6, 2018 (Order No. 4399). As the Commission states in Order No. 4399, “the use of TACS data as a source is more comprehensive for the purpose of determining the share of costs for regular letter routes and SPRs than using the IOCS alone.” Order No. 4399 at 14.

### A. New Statistical Study Design.

*Summary of Sampling Modes.* Proposal Two modifies the IOCS methodology for sampling city carriers. It proposes to implement “a multi-stage clustered design that samples [either] a cluster of carriers assigned to a specific zone [(in the morning, before 11:00 am), or] carriers within a district during a specific one-hour time block” (in the afternoon, between 11:00 am and 7:00 pm). Petition, Proposal Two at 6, 17-18. For morning tests, the Postal Service samples separately large delivery zones (that have 6 or more carrier routes) and small zones (that have less than 6 routes). *Id.* at 5-6. Table 1 provides a summarized description of the sampling modes. *Id.* at 5-7, 19-21.

Table 1: Sampling Modes in a City Carrier IOCS-Cluster Design

Sampling Mode #	Time of the day	Sampling Unit	Considered days	Method of Selecting zones/ districts	Method to conduct readings	# of sampled carriers	Frequency of readings
1	Morning	Large Zone/Facility -day	Monday through Saturday (excluding holidays)	In proportion to the number of DOIS hours	On-site	6	Every 5 minutes
2		Small Zone/Facility -Day		In proportion to the number of routes		Up to 5	Every 15 minutes
3	Afternoon	District		In proportion to the number of DOIS hours	By phone	30	In one-hour blocks

Source: Petition, Proposal Two at 4-7, 17-21.

*Statistical Methodology for Morning Tests.* The Postal Service stresses that the proposed morning on-site tests would provide the opportunity to scan carriers' barcodes. *Id.* at 3. The Public Representative agrees that this should improve accuracy of readings and, potentially, benefit the overall data quality. For morning tests, the frame for the first-stage sampling would include all "delivery zones and facilities with at least one city carrier route."<sup>12</sup> *Id.* at 19. The Postal Service explains that this frame excludes delivery zones with "small offices that have only rural routes or other non-city modes of delivery." Responses to CHIR No. 1, question 9. Considering that Proposal Two applies to the city carrier delivery network, it is reasonable to exclude rural delivery routes from sampling frame. Depending on the size of delivery zone, the Postal Service applies one of two sampling modes. Petition, Proposal Two at 5-6. To sample large zones that have between 6 and 74 carrier routes, the Postal Service uses sampling mode 1.<sup>13</sup> *Id.*; Petition, Proposal Two at 4-6. To sample small zones with less than 6 city carrier routes, the Postal Service applies sampling mode 2. Petition, Proposal Two at 4,6.. For large zones, the Postal Service performs "stand alone" testing, but for small zones, synchronizes IOCS-Cluster tests with City Carrier Cost System (CCCS) tests for cost-efficiency reasons. *Id.* at 5-6; 19.

In sampling mode 1, the Postal Service sorts large zones by district and then orders the zones in proportion to the number of hours recorded in DOIS in the proceeding four weeks. *Id.* at 19; Responses to CHIR No. 1, question 11a. The Public Representative has two observations here.

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<sup>12</sup> The Postal Service identifies delivery zones by both ZIP Code and finance number. *Id.* at 4, n. 5

<sup>13</sup> Large zones represent 67 percent of total number of zones in DOIS. Responses to CHIR No. 1, question 10.

First, the Postal Service states that a “four-week period is sufficiently long [to avoid] short-term fluctuations” and is also “sufficiently short [to avoid longer-term changes in workhours arising from structural changes in delivery operations.” Responses to CHIR No. 1, question 11c. Therefore, the Postal Service concludes that DOIS hours for a 4-week period would allow it to measure “the size of each zone” and “provide the basis for ‘probability proportional to size’ (pps) sampling.” *Id.* The Public Representative generally agrees that a 4-week period appears reasonable.<sup>14</sup>

Second, the Postal Service determines the size of each large zone based on number of DOIS hours for Labor Distribution Codes (LDCs) 21, 22, 23, 26, 27 and 29. Responses to CHIR No. 1, question 3. The Postal Service indicates that compared to TACS, “[h]ours for LDCs 23 and 27...are underreported in DOIS.” *Id.* However, city carriers assigned to regular routes clock primarily to LDCs 21 and 22 and city carriers assigned to Special Purpose Routes (SPRs) clock to LDCs 23, 24, 27. Order No. 4399 at 4, n. 16. It appears that workhours for city carriers assigned to SPRs are either excluded from DOIS (LDC 24) or underreported (LDC 23, 27). Therefore, the Postal Service determines the size of the zone primarily based on DOIS hours for city carriers assigned to regular routes.<sup>15</sup>

After ordering large zones according to their size, the Postal Service selects zones by applying systematic random sampling. Petition, Proposal Two at 19. Then “[p]ossible delivery days (Mondays through Saturdays, excluding holidays) are

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<sup>14</sup> It is still not clear whether the Postal Service considered any other time periods (e.g. 2-week, 3-week or 1 month long) and whether it tested how different the order of the zones would be if different time period were chosen. Such testing would help ensure that the order of zones is not too sensitive to a slight change in a length of the time period for which DOIS hours are recorded.

<sup>15</sup> That would not cause a problem if hours of city carriers assigned to SPR, which are missing from DOIS, are very small and have a very similar share in the total number of city carrier hours in each zone. The Public Representative suggests the Postal Service provides a clarification here.

randomized and systematically assigned to selected zones to determine the zone/facility-days.” *Id.* at 20. The Postal Service explains that selected zone/facility days “define the clusters of carriers that are eligible for sampling.” *Id.* Before each test, “the data collector identifies all carriers who will be working [in the selected zone on the particular day, and] the [IOCS Computerized On-Site Data Entry System] software (CODES software) randomly selects six carriers from the set of available carriers.” *Id.* See also Responses to CHIR No. 3, question 1. While the Postal Service asserts that “minimizing the number of carriers sampled”<sup>16</sup> has many advantages, the Public Representative strongly disagrees with this assertion for the reasons discussed below.

Under multi-stage or two-stage cluster sampling methodology, it is important to properly sample not only the primary sampling units (PSUs), but also secondary sampling units (SSUs).<sup>17</sup> For morning tests, by performing systematic random sampling, the Postal Service carefully applies statistical principles to the sampling of PSUs, which are zones (or, more precisely, zone/facility days). Petition, Proposal Two at 19; Responses to CHIR No. 1, question 11. The Postal Service notes that if PSUs are heterogeneous, stratification “can help ensure that subcategories of PSUs receive an adequate number of samples.” Responses to CHIR No. 1, question 11a. The Public Representative agrees with such an approach.

However, when the Postal Service selects individual carriers as SSUs, it randomly chooses an *a priori-defined* number of carriers (6 in large zones, 5 or less in

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<sup>16</sup> Responses to CHIR No. 1, question 12.

<sup>17</sup> See e.g. Ahmed Saifuddin, “Methods in Sample Surveys. Cluster Samplig”: John Hopkins University, 2009 at 2-3. Available at: <http://ocw.jhsph.edu/courses/StatMethodsForSampleSurveys/PDFs/Lecture5.pdf>; Banning Reinder, Camstra Astrea and Knottnerus Paul, “Sampling Theory. Sampling design and estimation Methods”: Statistics Netherlands, 2012 at 31. Available at <https://pdfs.semanticscholar.org/679f/cb51a5bb90b4f4f8d3bb479a6824565500ca.pdf>



small zones). Choosing small number of carriers is convenient from an operational prospective, but is not determined by statistical principles. The Postal Service argues that “carrier activities and mail handled do not vary greatly by zone,” and that, therefore, stratification is not required. Responses to CHIR No.1, question 11b. The Public Representative doubts whether the Postal Service has formally tested this assumption and/or evaluated the magnitude of such variation using econometric methods.

Common sampling practice requires that all elements within each cluster are investigated until “the clusters are fairly homogeneous,” meaning that “the elements within a cluster very closely resemble each other.”<sup>18</sup> In case of homogenous clusters, in the second stage, the estimators draw a sample of SSUs, but it is still important to determine the sample size considering “the precision that is required for an estimator.” *Id.* at 43. Clusters of carriers under Proposal Two, however, are not homogeneous, since SSUs (carriers) differ by CAG, craft, as well as size and type of their assigned route.

To correct this problem, The Postal Service provides a post-stratification of the collected data “using TACS workhour data...to control [the estimates] by craft group, CAG group and route group.” Petition, Proposal Two at 18, 21-25. Such post-stratification is a known practice, but only as a method to better reflect population characteristics after drawing a random sample of the appropriate size.<sup>19</sup> The Postal Service, however, does not attempt to estimate the desired size of the sample and

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<sup>18</sup> Banning (2012) at 30, 38, *supra* n. 17.

<sup>19</sup> See e.g. “A Practical Guide to Sampling”: NAO, 1999 at 7-10 and 19. Available at <https://www.nao.org.uk/wp-content/uploads/2001/06/SamplingGuide.pdf>

chooses six carriers for any large zone as “a compromise among multiple constraints and objectives.” Responses to CHIR No. 1, question 12.

Per the proposed methodology, as a data collector begins taking readings in a large zone, he/she “will not be able to change the list of six employees to sample.”<sup>20</sup> Carriers are sampled when they are in a parking lot or loading area and, as the Postal Service states, “sufficient time must be provided so that the data collector can find the sampled employee, obtain a mailpiece and record data.” Responses to CHIR No. 2, question 12; see *also* Responses to CHIR No. 3, questions 3 and 6. One of the reasons for the Postal Service to obtain readings from the same set of carriers is the ability to identify them by the data collectors while the carriers “are still at their case.” Responses to CHIR No. 2, question 12; see *also* Responses to CHIR No. 3, question 6. Although taking readings from the same 6 carriers every 5 minutes is practically convenient, surveying different carriers would allow for better representation of carriers (by CAG and craft) and their activities in a tested zone. Having a representative sample of data collected during each morning test is very important because this data is then “scaled to reflect the corresponding DOIS workhours for the tested zone.” Petition, Proposal Two at 7. If the collected data sample is not representative (does not accurately reflect actual data), it might lead to incorrectly estimated costs by tally category and product costs for the Cost and Revenue Analysis (CRA) report.

Under current methodology, the IOCS statistical study design includes three stages of probability sampling.<sup>21</sup> In stage 1 the Postal Service stratifies post offices or plants by CAG. *Id.* at 3-4. In stage 2, the Postal Service stratifies employees by craft

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<sup>20</sup> USPS-RM2018-5/2, folder “RM2018-5.2.Public,” subfolder “Prop2.CHIR1.Q15.Public,” file “SP Letter #3 FY2017\_R.pdf” at 4. For more details, including some exceptions see *also* Responses to CHIR No. 3, question 6 and USPS-RM2018-5/3.

<sup>21</sup> See Docket No. ACR2017, Library Reference USPS-FY18-37, Preface at 3-6.

within CAG, and assigns “[s]ampling rates [that are] specific to craft-CAG combinations.” *Id.* at 4-5. The Public Representative believes that such stratification helps ensure that the overall population is adequately represented by the sample. In stage 3 (which identifies time, within the selected week, for which the employee is scheduled for observation), the Postal Service “randomly selects a day with the probability proportional to the number of employees who work that day.” *Id.* at 5. The Public Representative concludes that while the current IOCS statistical design fully complies with major principles of sampling, the Postal Service does not follow them under the proposed methodology.

Statistical principles require that a sample of carriers selected from a zone represents all carriers in that zone.<sup>22</sup> As noted above, probability sampling used in the current non-cluster IOCS design ensures adequate sampling rates by CAG and craft. See USPS-FY18-37, Preface at 5. “Failure to use probability sampling often results in bias, or systematic errors in the way the sample represents the population.”<sup>23</sup> The proposed post-stratification might not completely remove the bias, since the sample of six carriers does not reflect the population of carriers (*i.e.*, it would not represent all crafts-CAG combinations, and routes by type and size).

It appears that by applying route group weighting factors, the Postal Service attempts to compensate for “empty cells” (when there are “no tallies within the combination of route group,” craft group and CAG). Petition, Proposal Two at a 12. The Postal Service explains that when “no smaller CAG is available, the data are

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<sup>22</sup> See *e.g.* Aczel Amir.D, “Complete Business Statistics””: Irwin, McGraw Hill, 5th Edition, 1999 at 840-842.

<sup>23</sup> Moore David S. and George P. McCabe, “Introduction to the Practice of Statistics”: W.H. Freeman and Company, 5th Edition, 2009, p. 207.

grouped with larger CAGs.” *Id.* The Postal Service indicates that here it implemented the approach suggested by the Commission in Order No. 4399. Petition, Proposal Two at 12. The Public Representative has reviewed the referenced order, but cannot confirm that the implementation of this approach in Proposal Two is either completely relevant or beneficial.

In Proposal Five, the Commission suggested that the Postal Service aggregate CAGs in order to avoid “empty cells” and apply TACS CAG group-specific factors instead of TACS systemwide factors initially proposed by the Postal Service. Order No. 4399 at 15-16. Use of CAG group-specific factors allowed for “more accurate reflect[ion of] year-to-year cost pool changes within those offices and crafts.” *Id.* In Proposal Two, however, the situation is different. The existence of “empty cells” is largely due to the Postal Service’s non-compliance with principles of sampling in the second and third stages when it selects SSUs (carriers for observation and time when to conduct readings). The Public Representative believes that the Postal Service could avoid or lessen the problem of “empty cells” if it correctly determined a sample size of carriers for large zones.<sup>24</sup> Unnecessary aggregation (e.g. by CAG) decreases data quality, which, unsurprisingly, leads to a significant change in the percentage of tallies by category. Petition, Proposal Two at 13.

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<sup>24</sup> In large zones, the number (population) of carries is not very high: it is in the range between 6 and 74. See Informal Response at 2; Responses to CHIR No. 1, question 10. While for large populations, sample size does not depend on population size, when the population is small, the sample size can be slightly reduced. A “given sample size provides proportionally more information for small population than for a large population.” Israel Glenn D., “Determining Sample Size”: University of Florida. IFAS Extension, 1992 at 3. Available at <https://www.tarleton.edu/academicassessment/documents/Samplesize.pdf>

The Public Representative concludes that in sampling mode 1, the Postal Service should modify its methodology for selecting carriers from clusters of carriers to ensure a representative sample.

In sampling mode 2, IOCS-Cluster tests for small zones are scheduled for the routes selected by CCCS. Petition, Proposal Two at 20. The same data collectors perform CCCS and IOCS-Cluster on-site readings, and the IOCS-Cluster readings are less frequent than those taken in sampling mode 1 (readings are conducted every 15 minutes and instead of every 5 minutes). *Id.* at 5-6. CODES software either selects all carriers working in the zone (if there are six or fewer such carriers) or randomly selects a subsample of six carriers. Since there are 5 or fewer routes in small zones, in most cases the number of selected carriers is equal to the overall number of carriers in a zone. Informal Response at 2. The Public Representative concludes that a sample of carriers in a small zone should better represent the population of carriers in a zone than a sample of carriers in a large zone. Data collected from these carriers should also better represent the actual data.

*Afternoon Tests.* For afternoon tests, the Postal Service's decision to randomly select 30 carriers "from IOCS panel offices within the district" has been also driven by operational reasons. Petition, Proposal Two at 23. The Postal Service states that it selects 30 carriers "as a reasonable number" that would allow it to conduct readings "in a one-hour time block." Responses to CHIR No. 1, question 13. In reality, however, the median number of readings conducted within a test in Q1 of FY 2018 was fewer than expected (24 readings). *Id.* The Public Representative's concerns about representativeness of data sampled in the afternoon are similar to the concerns about data sampled during morning tests. In addition, the Proposal Two would significantly decrease the number of non-stop afternoon readings per quarter (from 4,122 to 2,085, based on pilot tests), and the IOCS-Cluster design is not able to estimate workhours by

CAG, craft and route types because there are insufficient afternoon tallies. Responses to CHIR No. 1, questions 5; Responses to CHIR No. 3, question 5. The Postal Service confirms that under the current non-cluster IOCS methodology, “all route groups have a sufficiently large number of non-stop readings for both carrier [craft] subgroups. Responses to CHIR No. 3, question 5b. Again, the Public Representative is concerned that aggregation of data results in a lower precision of cost estimates.

*Precision of Estimates.* The Postal Service claims that the proposed IOCS-Cluster design significantly increases sampling efficiency.<sup>25</sup> Petition, Proposal Two at 8. This is an expected outcome since the primarily reason to use cluster sampling is to decrease costs, in spite of the high number of “[s]tandard errors of the estimates [when] compared to [standard errors] in other sampling designs with same sample size.”<sup>26</sup> The Public Representative observes that under the IOCS-Cluster design the Postal Service slightly decreases the number of non-stop readings (by 3.3 percent, based on FY 2018 Q1 data), when compared to the current non-cluster design. Responses to CHIR No. 1, question 17. As discussed above, the Postal Service followed statistical principles of sampling only in the first stage (when it selected zone and zone/days, for morning days or districts, for afternoon tests). Petition, Proposal Two at 19-20, 23. In the second and third stages, the Postal Service selected carriers for observation and time when to conduct readings without considering representativeness of sample or precision of the estimates. Whether the post-stratification of readings using census data would compensate for disadvantages of the proposed statistical design is an open question.

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<sup>25</sup> The Postal Service measures sampling efficiency as the percentage of non-stop readings (successful reading attempts that are “used to determine product costs) out of all reading attempts.” Responses to CHIR No. 1, question 17.

<sup>26</sup> Ahmed (2009) at 2, *supra* n.17.

In a two-stage or multi-stage stage cluster sampling design, where statistical principles are applied in every stage of sampling, there are known methods of estimating variances.<sup>27</sup> The Postal Service still does not have coefficients of variation (CVs) or variances available. Petition, Proposal Two at 9. The Postal Service states that it “is making progress on developing a program [to perform such estimates] using the bootstrap approach,” and is expecting to have “results and documentation... available by the end of July.” Responses to CHIR No. 1, question 16.

Bootstrapping is a well-known statistical method, and the idea underlying it “is to use the data of a sample study at hand as a ‘surrogate population’, for the purpose of approximating the sampling distribution of a statistic.”<sup>28</sup> Bootstrapping techniques include so-called re-sampling and creation of large number of new samples, known as bootstrap samples. *Id.* The major assumption behind bootstrapping is that the sample used as a surrogate population is “representative of the [actual] population.”<sup>29</sup> As discussed above, the data sample obtained using the new statistical design might not be representative of the overall population. In this situation bootstrapping cannot be a valid method to estimate CVs and variances for the proposed IOCS-Cluster sampling design.

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<sup>27</sup> See e.g. Lohr Sharon L., “Sampling, Design and Analysis”: Duxbury Press, 1999 at 147-148. Available at [https://drive.uqu.edu.sa/\\_/maatia/files/Sampling.pdf](https://drive.uqu.edu.sa/_/maatia/files/Sampling.pdf)

<sup>28</sup> Singh Kesar and Xie Ming, “Bootstrap: A Statistical Method”: Rutgers University, 2008 at 2. Available at: <http://www.stat.rutgers.edu/home/mxie/rcpapers/bootstrap.pdf>

<sup>29</sup> Ong Desmond. C. “A Primer to Bootstrapping; and an Overview of doBootstrap”: Stanford University, 2014 at 2. Available at: <https://web.stanford.edu/class/psych252/tutorials/doBootstrapPrimer.pdf>

### B. Sunday and Holiday Carrier Costs

Proposal Two seeks to use TACS hours to “develop control total costs for Sunday/[h]oliday,” and then distribute these costs using PTR data.<sup>30</sup> Petition, Proposal Two at 5, 9. As the Postal Service has previously indicated, TACS and PTR are currently “used to assign costs to NSA contract pieces on Sundays and [h]olidays.”<sup>31</sup> TACS is a “repository of workhours clocked in by City carriers, clerks and supervisors [,and] PTR has the scans needed to identify pieces delivered on Sundays and [h]olidays.” *Id.* While “for purposes of evaluating and presenting” the impact of Proposal Two on FY 2017 costs, the Postal Service attributes all accrued costs for city carriers on Sundays and holidays to the Parcel Select product, the Postal Service delivers other mail products on Sundays/holidays.<sup>32</sup> Responses to CHIR No. 1, question 18.

The Public Representative has reviewed the percentages of parcels and other mail products delivered on Sundays and holidays in FY 2017, and does not support the Postal Service’s decision to attribute all Sunday/holiday costs for city carriers to Parcel Select.<sup>33</sup> The Public Representative believes that the Postal Service should perform

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<sup>30</sup> Details of using PTR data for Sunday/Holiday cost will be subject of a separate proposal the Postal Service is currently planning to file. Petition, Proposal Two at 5, n. 6.

<sup>31</sup> Docket No. PI2017-1, Inquiry Concerning City Carrier Costs, Responses of the United States Postal Service to Questions 1-20 of Chairman’s Information Request No. 4, question 2, November 28, 2017 (Docket No. PI2017-1, Responses to CHIR No.4)

<sup>32</sup> The Postal Service has been delivering parcels on Sunday since October 2013, after entering into the agreement with Amazon. See Sunday Parcel Delivery Service, OIG Audit Report DR-AR-15-002, December 5, 2014. Available at <https://www.uspsoig.gov/sites/default/files/document-library-files/2015/dr-ar-15-002.pdf>. While the Postal Service delivers Amazon packages as Parcel Select mail products, it also delivers Priority Mail Express items. See <http://www.uspsinfo.com/amazon-sunday-delivery/>

<sup>33</sup> See USPS-RM2018-5/NP2, folder “Prop2.ChIR1.Q18.NP.”



further analysis and at least consider the known percentages of different mail products delivered on Sundays/holidays before attributing city carrier costs accrued on Sundays/holidays to products.

Also, the Postal Service's data on mail volumes by product is not always accurate, which makes attribution of accrued city carrier costs to any particular products even more problematic. As the Postal Service states, occasionally, carriers deliver non-parcel-shaped mail pieces that do not have IMpb barcodes, but data on their volume "is unavailable." Responses to CHIR No. 1, question 18b. The Postal Service also indicates that some mailpieces delivered on Sundays/holidays that do have IMpb barcodes are "not parcel-shaped, but...are treated the same as parcels." *Id.*, question 18a.

It is worth mentioning that the Postal Service's data records have had other inaccuracies in the past. For example, in FY 2017, some carriers working on Sunday were incorrectly recorded as assigned to a letter route cost group, and not to SPR cost group. Responses to CHIR No 2, question 7. The Postal Service explains that these inaccuracies were mostly "due to an ambiguity in the identification of Sunday routes." *Id.* In light of the significant growth in Sunday delivery package volumes, the Public Representative suggests that the Postal Service better identify Sunday routes to avoid errors.

Currently, cost segments 6 and 7 (CS06&07) of the CRA report do not include costs associated with "NSA-related Sunday-specific costs." Responses to CHIR No. 2, question 4. Taking into account that the Postal Service considers these costs 100 percent attributable, "there is an adjustment to the final CRA that transfers from institutional costs an amount that ensures that final attributable cost these NSA-related Sunday specific costs." *Id.* Under Proposal Two, the Postal Service plans to include a

portion of Sunday and holiday city carrier costs into CS06&07 and modify the CRA final adjustment calculation to avoid double counting. *Id.*; “Prop2.ChIR2.Q4.FinalAdjust.xlsx.” Based on the Postal Service’s response, the Public Representative assumes that this adjustment has been applied to costs attributable to NSAs within the Parcel Select product. It is not clear whether Proposal Two includes any similar changes in regard to Sunday/holiday costs accrued for delivery of the Priority Mail Express product or other products that the Postal Service delivers on Sundays or holidays.

## V. CONCLUSION

For the reasons discussed above, the Public Representative cannot conclude that the proposed IOCS-Cluster sampling design, in its current state, improves the quality, accuracy, or completeness of the Postal Service’s data, compared to the non-cluster IOCS statistical methodology, as required by 39 CFR 3050.11(a). The Public Representative generally supports the idea of using TACS workhours to estimate city carrier costs accrued on Sundays/holidays but believes the Postal Service should perform further study before attributing these costs to mail products.

The Public Representative respectfully submits the foregoing comments for the Commission’s consideration.

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